

REMARKS

Claims 1-4 are pending. Claims 1, 2, and 4 stand rejected. Claim 5-7 have been added. Claims 1 and 5 are independent claims.

Drawings stand objected for allegedly using reference number “132” to designate both a connection to a temperature sensing part failing and connection to a resistance section. In response, applicant has deleted the reference number “132” that designate connection of thermistor and the resistance section. Applicant respectfully requests removal of the objection.

Claim 2 stand objected for containing several typographical errors. In response, applicant has corrected the errors. Thus, applicant respectfully requests removal of the objection.

Claim 3 stand objected for allegedly failing to provide a proper antecedent basis for the feature “resistance value-setting means.” In response, applicant has amended the claim to recite a “resistance means.” Therefore, applicant respectfully request removal of the objection.

Claim 4 stands rejected under 35 U.S.C. 112, second paragraph, as being indefinite for allegedly reciting an apparatus and method steps of using the apparatus.

The preamble of claim 4 recites a “**temperature-compensating device** according to claim 1, wherein the temperature-compensating device is **configured to** perform the following steps...” As noted in the preamble, claim 4 is not a single claim that claims both an apparatus and the method steps of using the apparatus. Instead, **claim 4 is an apparatus claim that further defines the apparatus in functional language.**

Applicant respectfully submits that the United States Court of Appeals for the Federal Circuit and its predecessor, the United States Court of Customs and Patent Appeals, have, on

numerous occasions, upheld validity of apparatus claims that define the apparatus using functional language. In particular, the Court of Customs and Patent Appeals held in *In re Swinehart* that “there is nothing intrinsically wrong with [defining something by what it does rather than what it is] in drafting patent claims” (439 F.2d 210, 169 USPQ 226 (C.C.P.A. 1971)). Meanwhile, the Federal Circuit held that “a patent applicant is free to recite feature of an apparatus either structurally or functionally” (128 F.3d 1473, 1478, 44 USPQ2d 1429 (Fed. Cir. 1997)).

Moreover, the Board of Patent Appeals and Interferences does not disapprove apparatus claims that further define the apparatus with functional language. In *ex parte Lyell*, the Board addressed the issue of whether one single claim that recites both the apparatus and the method steps of using the apparatus violates the requirement of 35 U.S.C. 112 (17 USPQ2d 1548, 1548-1549 (B.P.A.I. 1990)).¹ Concluding that such a claim would raise “serious questions for a manufacturer or seller of a tool like that claimed by [the patent applicant] regarding infringement,” the Board upheld the rejection under 35 U.S.C. 112, second paragraph (Id. at 1550). The Board, however, did not hold that a dependent apparatus claim that further defines the apparatus using functional language violates the requirements of 35 U.S.C. 112, second paragraph and 35 U.S.C. 101.

¹ Lyell claimed

“2. An automatic transmission tool and method for using same comprising:

a support means,
and [sic] internally splined sleeve affixed upright to said support means,
a threaded adjustment bolt threadably engaged through a hole in the bottom of said support means and projecting upward through said support frame into said sleeve,

and further comprising the step of

1. positioning the output end of an automatic transmission onto said upright sleeve,
2. removing the internal components of said automatic transmission from the casing of said transmission,
3. repairing and replacing said internal components back into said casing, and
4. adjusting said internal components for fit and interference by means of adjusting said upwardly projecting adjustment bolt.”

Therefore, applicant respectfully submits that the holding of *ex parte Lyell* is limited to **one single claim** that recites both the apparatus and the method steps of using the apparatus. The holding is not applicable to the present claim 4 and does not support the present rejection. Meanwhile, validity of the present claim 4 is well supported by *In re Schreiber* and *In re Swinehart*. As such, applicant respectfully submits that claim 4 does not violate the requirement of 35 U.S.C. 112, second paragraph, and applicant respectfully requests removal of the rejection.

Applicant wishes to thank the Examiner for indicating that claim 3 is allowable if claim 3 is rewritten as an independent claim incorporating all features of the base claim. At this time, applicant, however, wishes to defer amending claim 3.

Claim 1 stand rejected under 35 U.S.C. ' 103(a) as allegedly being anticipated by Maeda *et al.* (U.S. 6,157,022) ("Maeda"). Claim 1 recites, *inter alia*, "**a resistance means configured with a digital potentiometer having a resistance value of a plurality of steps.**"

Support for the amendment can be found at page 12, line 12-16, which discloses a resistance means configured with a digital potentiometer having a resistance value of a plurality of steps.

Maeda, as read by applicant, discloses a bias control circuitry for avalanche photodiodes. However, nowhere in Maeda is there "a resistance means configured with a digital potentiometer having a resistance value of a plurality of steps," as recited in claim 1. Accordingly, applicant respectfully submits that Maeda fails to teach all features of claim 1 and fails to render claim 1 obvious. Applicant respectfully requests withdrawal of the rejection.

New claim 5 and its dependent claims 6-8 have been added. Claim 5-8 recites same features as claim 1-4. As such, no new matter has been added. Moreover, claims 5-8, alone or in

combination, are patentable over the prior art reference, and applicant respectfully requests early passage of the claims.

In particular, claim 5 recites the resistance means which is also recited in claim 1. As such, applicant submits that claim 5 is patentable over Maeda. In addition, claim 5 recites, *inter alia*, “a control means containing a temperature-voltage memory means for storing the output-voltage data in accordance with the temperature of the APD...”

As acknowledged by the Office Action, nowhere in Maeda is there a disclosure of the “control means containing a temperature-voltage memory means for storing the output-voltage data in accordance with the temperature of the APD” (see the present Office Action page 5, paragraph 8). In rejecting the patentability of the temperature-voltage memory means, the Office Action indicates that “it would have been obvious to one of ordinary skill in the art to provide such a memory means to Maeda in order to give the apparatus the ability to accurate control the resistance values and measure the temperature” (see the present Office Action, page 5).

Applicant respectfully submits that in order to establish *prima facie* case of obviousness, the prior art references must show (1) some suggestion or motivation, either in the reference themselves or in the knowledge of generally available to one of ordinary skill in the art, to modify the references; (2) a reasonable expectation of success; **and** (3) all features of a claim (*In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)).

As noted above, Maeda fails to show the control means containing the temperature-voltage memory means, thus Maeda fails to meet the third requirement. Meanwhile, the issue of whether “it would have been obvious to one of ordinary skill in the art to provide such a memory means...” is related to the third requirement. As the *prima facie* case of obviousness requires all three requirements (*Id.*), meeting the first requirement does not cure the deficiency in the third

requirement. In other words, even if “it would have been obvious to one of ordinary skill in the art to provide such a memory means...,” the reference does not render claim reciting the memory means obvious, as the reference does not teach such memory means.

Moreover, applicant believes that it would **NOT** have been obvious to one of ordinary skill in the art to provide such memory means to Maeda, as the temperature compensation (42) of Maeda cannot employ any configuration related to the temperature-voltage memory means recited in claim 5. In particular, the temperature compensation (42A) of Maeda, which the Office Action equates with the control means (402) of the present invention, comprises a transistor (422) and a variable resistor (423) and operates according to voltage output from the temperature sensor (421) (see Figure 8). Maeda discloses that such temperature compensation (42A) outputs voltage corresponding to change in ambient temperature without recording such change (see column 8, line 42 – column 9, line 16).

Therefore, applicant respectfully submits that the temperature compensation (42) Maeda cannot and does not employ any configuration related to the temperature-voltage memory means recited in claim 5, and it would **NOT** have been obvious to one of ordinary skill in the art to provide such memory means to Maeda. As Maeda fails to satisfy the first requirement, as well as the third requirement, of the *prima facie* case of obviousness, applicant respectfully submits that claim 5 is patentable over Maeda.

Claim 9 has been added. Claim 9 is a method claim containing functional language of claim 4. Therefore, no new matter has been added. Applicant respectfully submits that claim 9 is patentable over Maeda, and applicant respectfully requests early passage of the claim.

Claim 9 recites the method for temperature-compensating containing a step of “confirming whether a temperature coefficient of the temperature-compensating device is

changed and storing a new relational data in accordance with the 'Steinhart & Hart' equation when the temperature coefficient has been changed..."

Applicant respectfully submits that Maeda, as noted above, simply outputs temperature compensating voltage based on difference in the ambient temperature. It does not confirm whether the temperature coefficient of the temperature-compensating device is changed or store a new relational data in accordance with the 'Steinhart & Hart' equation when the temperature coefficient has been changed, as recited in claim 9.

Moreover, claim 9 recites the steps of, *inter alia*, "**storing initial values including... the temperature data of the APD in accordance with the first resistance value...**"

Applicant respectfully submits that nowhere in Maeda is there a disclosure that the circuitry disclosed in Maeda stores the temperature data of the APD in accordance with the first resistance value, as does the temperature-compensating device recited in claim 9.

Therefore, Maeda fails to teach, anticipate, and/or render all features of claim 9 obvious. Applicant respectfully submits that claim 9 is patentable over Maeda, and respectfully requests passage of the claim.

Other claims in this application are each dependent on the independent claim 1 and 5 and are therefore believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual consideration of the patentability of each on its own merits is respectfully requested.

Amendment
Serial No. 10/688,496

Should the Examiner deem that there are any issues which may be best resolved by telephone, please contact Applicant's undersigned representative at the number listed below.

Respectfully submitted,

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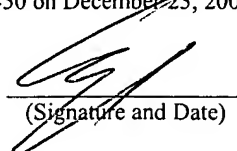
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(Signature and Date)

Amendment
Serial No. 10/688,496

IN THE DRAWINGS

Please replace the original Figure 5 with the replacement sheet Figure 5.